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Metal Industry Indicators

Composite Indexes of Leading and Coincident Indicators of Selected Metal Industries for December and January—Summary Report

February 18, 2005

The **primary metals leading index** stepped down 0.7% in January to 144.8 from a revised 145.8 in December, and its 6-month smoothed growth rate fell to 2.3% from a revised 4.4%. The 6-month smoothed growth rate is a compound annual rate that measures the near-term trend. Usually a growth rate above +1.0% signals an increase in metals activity, and a growth rate below -1.0% indicates a downturn in activity. Despite the decrease in the leading index's growth rate, domestic and global demand for metal is likely to keep primary metals activity growing at a modest-to-moderate pace in the near future.

Three of the four indicators that were available for the January index calculation declined, and one increased. The stock price index for construction and farm machinery companies and for industrial machinery companies decreased for the first month since August. It made a -0.7-percentage-point contribution to the net decrease in the leading index. The lowest reading for the JOC-ECRI metals price index growth rate since December 2002 also contributed -0.7 percentage points to the leading index. The PMI, a measure of U.S. manufacturing activity, held the index down another 0.2 percentage points. A longer average workweek in primary metals establishments made the only positive contribution, 0.9 percentage points. The January leading index should be considered preliminary because only four of its eight indicators were available, and the leading index will likely be revised when the other components are added next month.

Metals are key inputs in durable goods manufacturing and construction, which account for almost a quarter of gross domestic product final sales. Therefore, the primary metals leading index also gives early signals of major changes in activity for the overall U.S. economy (Chart 8).

The primary aluminum and the aluminum mill products indexes are suspended because of discontinued availability of industry-specific historical data. The USGS will continue to calculate the steel and copper composite indexes. These indexes are available through December. The copper leading index edged down 0.1% in December with mixed movements among its six indicators. The only indicator that has consistently moved in the same direction recently is the yield spread between the federal funds rate and the 10-year Treasury Note. It has generally moved downward since the summer of 2003. When this indicator falls below +1.0%, which it is moving towards, metals activity usually declines. Moreover, the declining copper

leading index growth rate appears to suggest that industry activity growth is likely to slow in the near future. The steel leading index jumped 1.6% with all of its nine indicators increasing, except for a slight decrease in the PMI. Increased sales of new cars and light truck in December, partly due to sales incentives, made the largest contribution, 0.6 percentage points. The steel leading index growth rate is indicating that activity in the steel industry is likely to continue to grow moderately in the near future.

The **metals price leading index** retreated 0.3% in December, the latest month for which it is available, to 110.9 from a revised 111.2 in November, however its 6-month smoothed growth rate inched up to -2.5% from a revised -2.6% in November. Two of its three available indicators decreased in December. A narrowing yield spread between the U.S. 10-year Treasury Note and the federal funds rate made a -0.3-percentage-point contribution. The growth rate of the inflation-adjusted value of new orders for U.S. nonferrous metal products contributed -0.1 percentage point. The 0.2-percentage-point contribution from the rise in the growth rate of the trade-weighted average exchange value of other major currencies against the U.S. dollar did not outweigh those declines. The fourth component, the growth rate of the Economic Cycle Research Institute (ECRI) 18-Country Long Leading Index was only available though November. It declined, suggesting weaker growth in global economies. The ECRI 18-Country Long Leading Index gauges future economic activity for major industrialized countries and signals changes in the growth of economic activity about 5 months in advance. The metals price leading index signals major changes in the growth rate of nonferrous metal prices an average of 8 months in advance.

The growth rate of the inflation-adjusted value of U.S. nonferrous metal products inventories, which is an indicator of supply, decreased to -3.5% in December from a revised -2.7% in November. This indicator usually moves inversely with the price of metals. Despite the slight increase in the metals price leading index growth rate, inventories may have to shrink more before growth in prices resumes.

The percent changes from November to December for the **metal industry coincident indexes**, which measure current economic activity, are shown below. December is the latest month for which these indexes are available.

Primary Metals	0.8%
Steel	1.6%
Copper	2.1%

Tables 1, 3, 5, and 7 identify the indicators and, for the industry indexes, show the contributions of each indicator to its respective index.

The *Metal Industry Indicators* report is produced at the U.S. Geological Survey by the Minerals Information Team. For more information about these indexes and the *Metal Industry Indicators* monthly report, contact Gail James (703-648-4915), (e-mail, gjames@usgs.gov) at the U.S. Geological Survey.

The *Metal Industry Indicators* summary report with indexes for December and January is scheduled for release on the World Wide Web at 10:00 a.m. EST, Friday, March 18.

Table 1.
Leading Index of Metal Prices and Growth Rates of the Nonferrous Metals Price Index, Inventories of Nonferrous Metal Products, and Selected Metal Prices

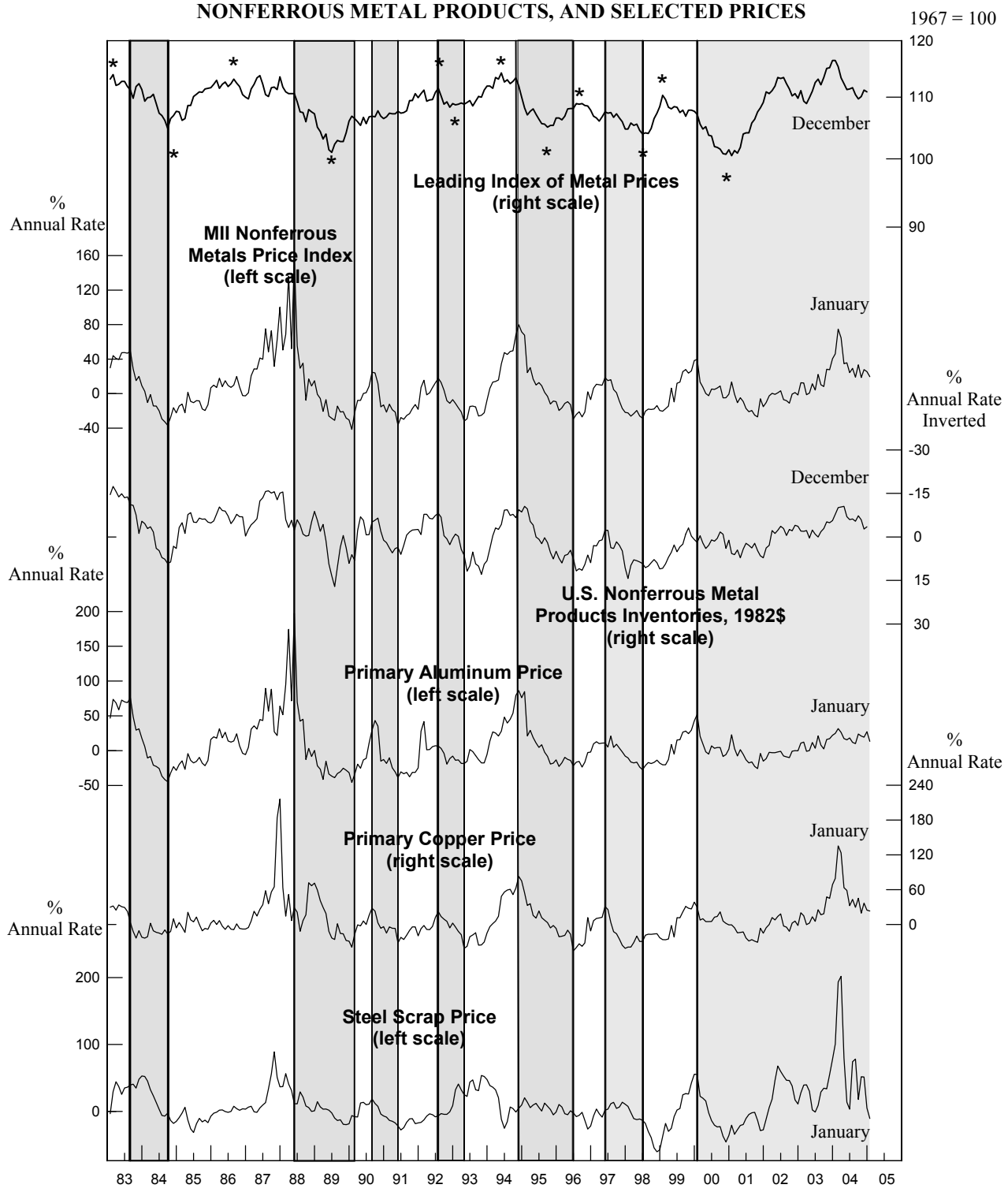
		Six-Month Smoothed Growth Rates				
	Leading Index of Metal Prices (1967=100)	MII Nonferrous Metals Price Index	U.S. Nonferrous Metal Products Inventories (1982$)	Primary Aluminum	Primary Copper	Steel Scrap
2003						
December	116.4r	40.4	-5.6	22.2	68.6	77.9
2004						
January	116.4r	46.1	-7.8	24.7	79.3	100.7
February	115.3r	74.8	-10.1	31.7	135.4	193.5
March	113.3	64.7	-10.3	26.3	123.4	201.9
April	112.3r	34.7	-10.5	17.3	63.4	80.1
May	111.3r	35.9	-7.0	15.5	58.8	13.8
June	111.4r	24.5	-6.0	18.2	32.4	3.4
July	111.6r	29.4	-6.2	11.8	43.2	74.4
August	110.4	19.2	-5.4r	10.2	29.4	78.3
September	109.7	33.4	-7.3r	23.8	45.1	18.0
October	110.1r	18.6	-5.9r	21.0	19.5	51.8
November	111.2r	28.0	-2.7r	19.2	36.7	51.4
December	110.9	25.5	-3.5	27.0	24.7	5.0
2005						
January	NA	19.6	NA	13.5	23.2	-10.6

NA: Not available **r:** Revised

Note: The components of the Leading Index of Metal Prices are the spread between the U.S. 10-year Treasury Note and the federal funds rate, and the 6-month smoothed growth rates of the deflated value of new orders for nonferrous metal products, the Economic Cycle Research Institute's 18-Country Long Leading Index, and the reciprocal of the trade-weighted average exchange value of the U.S. dollar against other major currencies. The Metal Industry Indicators (MII) Nonferrous Metals Price Index measures changes in end-of-the-month prices for primary aluminum, copper, lead, and zinc traded on the London Metal Exchange (LME). The steel scrap price used is the price of No. 1 heavy melting. Inventories consist of the deflated value of finished goods, work in progress, and raw materials for U.S.-produced nonferrous metal products (NAICS 3313, 3314, & 335929). Six-month smoothed growth rates are based on the ratio of the current month's index or price to its average over the preceding 12 months, expressed at a compound annual rate.

Sources: U.S. Geological Survey (USGS); American Metal Market (AMM); the London Metal Exchange (LME); U.S. Census Bureau; the Economic Cycle Research Institute, Inc. (ECRI); and Federal Reserve Board.

CHART 1.
LEADING INDEX OF METAL PRICES AND GROWTH RATES OF NONFERROUS METALS PRICE INDEX, INVENTORIES OF NONFERROUS METAL PRODUCTS, AND SELECTED PRICES



Shaded areas are downturns in the nonferrous metals price index growth rate. Asterisks (*) are peaks and troughs in the economic activity reflected by the leading index of metal prices. Scale for nonferrous metal products inventories is inverted.

U.S. Geological Survey, February 2005

Table 2.
The Primary Metals Industry Indexes and Growth Rates

	Leading Index		Coincident Index	
	(1977 = 100)	Growth Rate	(1977 = 100)	Growth Rate
2004				
February	141.3r	11.7r	98.3r	2.9r
March	143.2r	12.9r	99.8r	5.7
April	143.0r	10.5r	98.9r	3.7r
May	142.8r	8.4r	99.9r	3.5r
June	142.4r	6.3r	100.2r	5.4
July	143.8r	7.0r	100.7r	5.5r
August	143.1r	4.6r	100.6r	4.5r
September	142.9r	3.4r	100.5r	3.4r
October	143.3r	2.8r	100.5r	2.6r
November	144.9r	4.1r	100.6r	2.2r
December	145.8r	4.4r	101.4	3.2
2005				
January	144.8	2.3	NA	NA

NA: Not available **r:** Revised

Note: Growth rates are expressed as compound annual rates based on the ratio of the current month's index to the average index during the preceding 12 months.

Table 3.
The Contribution of Each Primary Metals Index Component to the Percent Change in the Index from the Previous Month

Leading Index	**December**	**January**
1. Average weekly hours, primary metals (NAICS 331)	0.1r	0.9
2. Weighted S&P stock price index, machinery, construction and farm and industrial (December 30, 1994 = 100)	0.3r	-0.7
3. Ratio of price to unit labor cost (NAICS 331)	0.4	NA
4. JOC-ECRI metals price index growth rate	-0.4r	-0.7
5. New orders, primary metal products, (NAICS 331 & 335929) 1982$	0.0	NA
6. Index of new private housing units authorized by permit	0.0	NA
7. Growth rate of U.S. M2 money supply, 2000$	0.2	NA
8. PMI	0.0r	-0.2
Trend adjustment	0.0	0.0
Percent change (except for rounding differences)	0.6r	-0.7

Coincident Index	**November**	**December**
1. Industrial production index, primary metals (NAICS 331)	-0.1r	0.6
2. Total employee hours, primary metals (NAICS 331)	-0.1r	0.0
3. Value of shipments, primary metals products, (NAICS 331 & 335929) 1982$	0.2r	0.2
Trend adjustment	0.1	0.1
Percent change (except for rounding differences)	0.1r	0.9

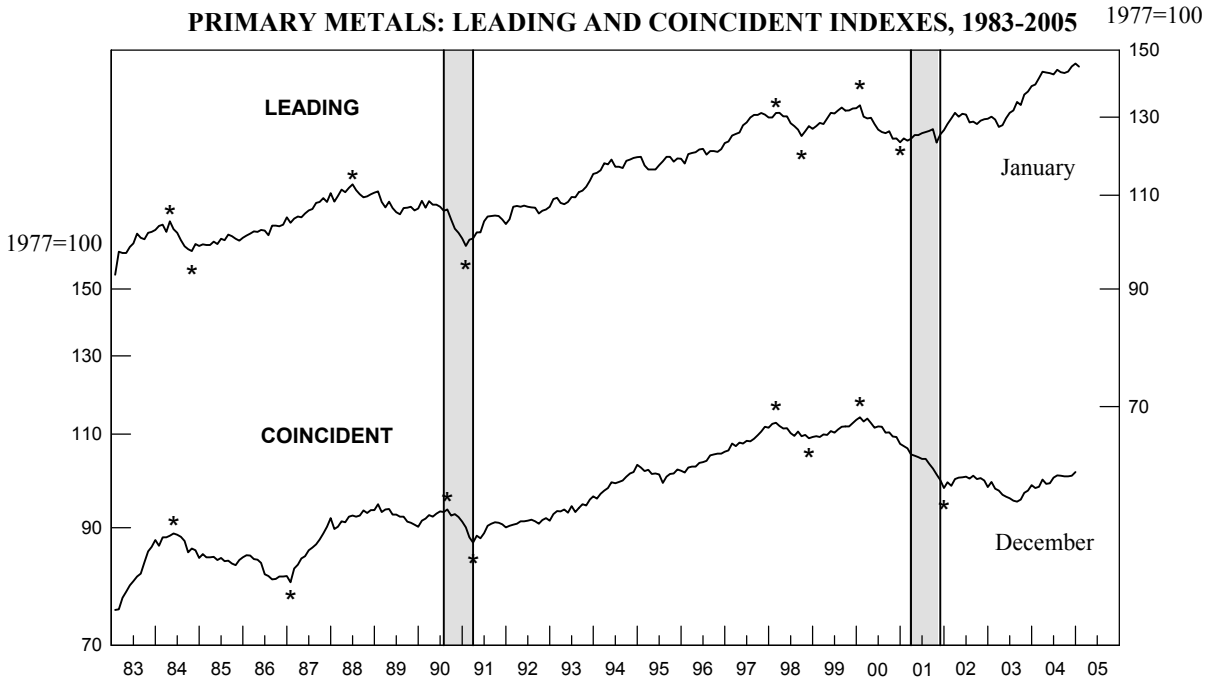
Sources: Leading: 1, Bureau of Labor Statistics; 2, Standard & Poor's and U.S. Geological Survey; 3, U.S. Geological Survey; 4, Journal of Commerce and Economic Cycle Research Institute, Inc.; 5, U.S. Census Bureau and U.S. Geological Survey; 6, U.S. Census Bureau and U.S. Geological Survey; 7, Federal Reserve Board, Conference Board, and U.S. Geological Survey; and 8, Institute for Supply Management. Coincident: 1, Federal Reserve Board; 2, Bureau of Labor Statistics and U.S. Geological Survey; 3, U.S. Census Bureau and U.S. Geological Survey. All series are seasonally adjusted, except 2, 3, and 4 of the leading index.

NA: Not available **r:** Revised

Note: A component's contribution, shown in Tables 3, 5, 7, and 9, measures its effect, in percentage points, on the percent change in the index. Each month, the sum of the contributions plus the trend adjustment equals (except for rounding differences) the index's percent change from the previous month.

CHART 2.

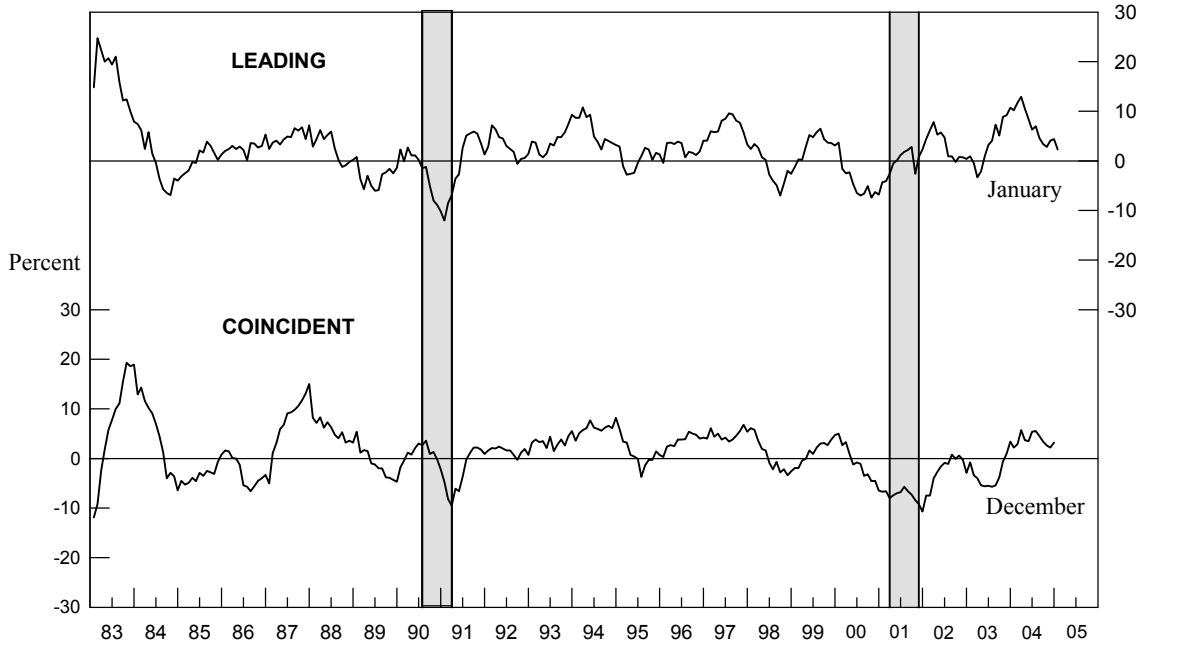
PRIMARY METALS: LEADING AND COINCIDENT INDEXES, 1983-2005



Shaded areas are business cycle recessions. Asterisks (*) signify peaks (the end of an expansion) and troughs (the end of a downturn) in the economic activity reflected by the indexes.

CHART 3.

PRIMARY METALS: LEADING AND COINCIDENT GROWTH RATES, 1983-2005



Shaded areas are business cycle recessions.

The growth rates are expressed as compound annual rates based on the ratio of the current month's index to its average level during the preceding 12 months.

Table 4.
The Steel Industry Indexes and Growth Rates

	Leading Index		Coincident Index	
	(1977 = 100)	Growth Rate	(1977 = 100)	Growth Rate
2004				
January	113.9r	4.7r	93.3r	1.1r
February	113.6r	3.6r	92.3r	-0.4r
March	114.5	4.4r	93.2r	1.5r
April	114.9r	4.3r	92.9r	1.0r
May	116.0r	5.1r	93.3r	2.0r
June	115.8r	4.1r	95.1r	5.6r
July	117.4r	6.0r	94.5r	3.7r
August	117.1	4.7r	94.4r	3.1r
September	118.2r	5.8r	95.2r	4.0r
October	116.8r	2.6r	95.0r	2.9r
November	119.1r	5.8	95.5r	3.2r
December	121.0	8.2	97.0	5.7

r: Revised

Note: Growth rates are expressed as compound annual rates based on the ratio of the current month's index to the average index during the preceding 12 months.

Table 5.
The Contribution of Each Steel Index Component to the Percent Change in the Index from the Previous Month

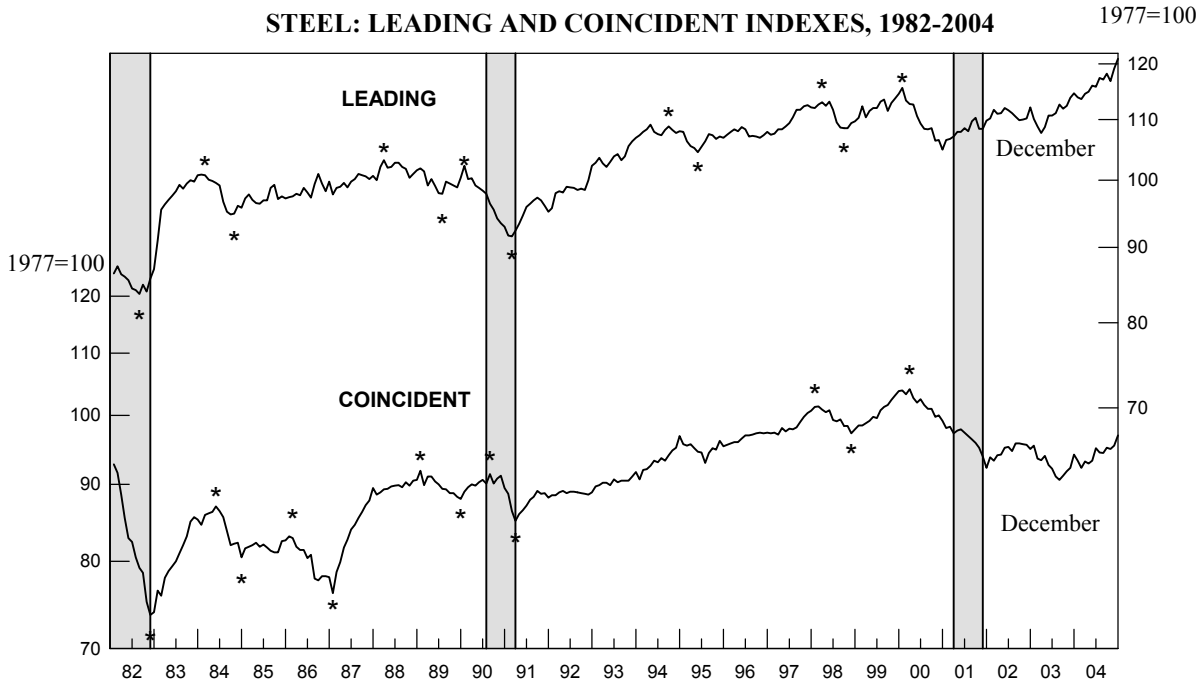
Leading Index	**November**	**December**
1. Average weekly hours, iron and steel mills (NAICS 3311 & 3312)	0.5r	0.1
2. New orders, iron and steel mills (NAICS 3311 & 3312), 1982$	0.3r	0.1
3. Shipments of household appliances, 1982$	0.2r	0.3
4. S&P stock price index, steel companies	0.7	0.3
5. Retail sales of U.S. passenger cars and light trucks (units)	-0.1	0.6
6. Growth rate of the price of steel scrap (#1 heavy melting, $/ton)	0.1	0.1
7. Index of new private housing units authorized by permit	0.0	0.0
8. Growth rate of U.S. M2 money supply, 2000$	0.2	0.2
9. PMI	0.0r	0.0
Trend adjustment	0.0	0.0
Percent change (except for rounding differences)	1.9r	1.7
Coincident Index		
1. Industrial production index, iron and steel products (NAICS 3311 & 3312)	-0.2r	0.6
2. Value of shipments, iron and steel mills (NAICS 3311 & 3312), 1982$	0.2r	0.5
3. Total employee hours, iron and steel mills (NAICS 3311 & 3312)	0.3r	0.4
Trend adjustment	0.1	0.1
Percent change (except for rounding differences)	0.4r	1.6

Sources: Leading: 1, Bureau of Labor Statistics; 2, U.S. Census Bureau and U.S. Geological Survey; 3, U.S. Census Bureau and U.S. Geological Survey; 4, Standard & Poor's; 5, U.S. Bureau of Economic Analysis and American Automobile Manufacturers Association; 6, Journal of Commerce and U.S. Geological Survey; 7, U.S. Census Bureau and U.S. Geological Survey; 8, Federal Reserve Board, Conference Board, and U.S. Geological Survey; and 9, Institute for Supply Management. Coincident: 1, Federal Reserve Board; 2, U.S. Census Bureau and U.S. Geological Survey; 3, Bureau of Labor Statistics and U.S. Geological Survey. All series are seasonally adjusted, except 4 and 6 of the leading index.

r: Revised

CHART 4.

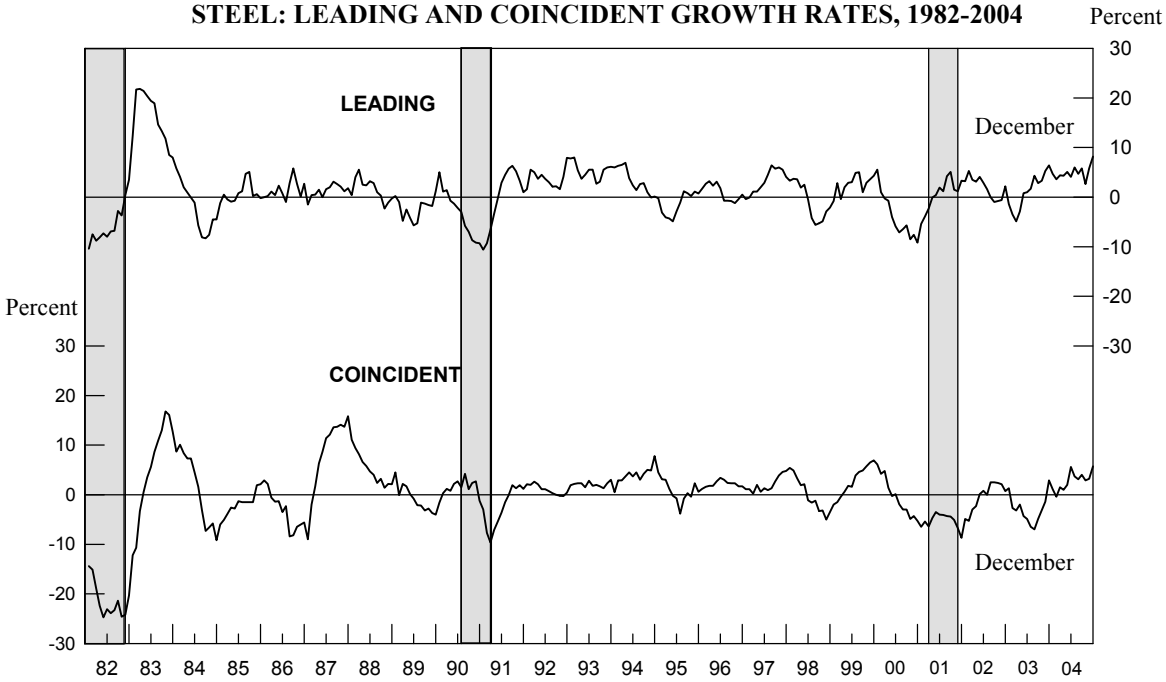
STEEL: LEADING AND COINCIDENT INDEXES, 1982-2004



Shaded areas are business cycle recessions. Asterisks (*) signify peaks (the end of an expansion) and troughs (the end of a downturn) in the economic activity reflected by the indexes.

CHART 5.

STEEL: LEADING AND COINCIDENT GROWTH RATES, 1982-2004



Shaded areas are business cycle recessions.

The growth rates are expressed as compound annual rates based on the ratio of the current month's index to its average level during the preceding 12 months.

U.S. Geological Survey, February 2005

Table 6.
The Copper Industry Indexes and Growth Rates

	Leading Index		Coincident Index	
	(1977 = 100)	Growth Rate	(1977 = 100)	Growth Rate
2004				
January	124.8	8.9	106.5	-0.1r
February	126.4	10.4	106.4r	-0.1r
March	128.0	11.5	108.1r	3.1
April	127.7	9.3	109.1r	4.6r
May	128.8	9.4	110.3r	6.0
June	128.2	7.0	110.4r	5.5r
July	128.6	6.1	110.0	4.3
August	127.4r	3.3r	108.8r	1.8
September	127.6	2.6	107.8r	-0.2r
October	127.1	0.9	108.0r	0.0r
November	127.8r	1.5	107.9r	-0.5r
December	127.7	0.6	110.2	3.1

r: Revised

Note: Growth rates are expressed as compound annual rates based on the ratio of the current month's index to the average index during the preceding 12 months.

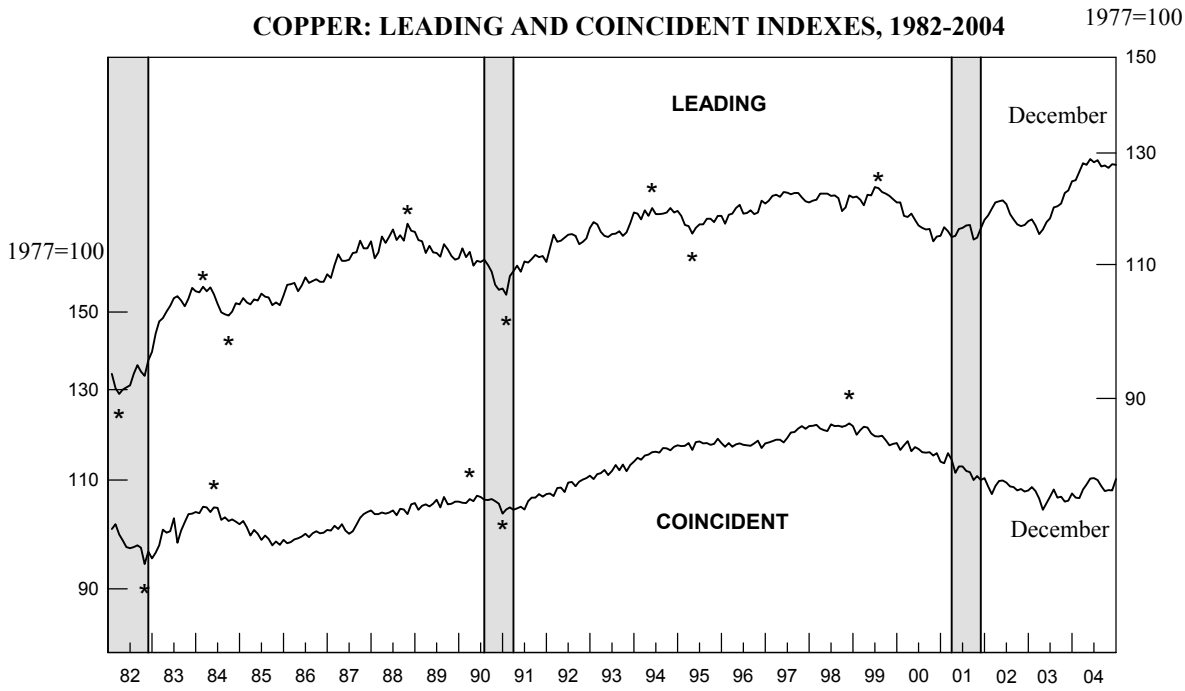
Table 7.
The Contribution of Each Copper Index Component to the Percent Change in the Index from the Previous Month

Leading Index	November	December
1. Average weekly overtime hours, copper rolling, drawing, extruding, and alloying (NAICS 33142)	-0.4r	0.0
2. New orders, nonferrous metal products, (NAICS 3313, 3314, & 335929) 1982$	0.0	-0.1
3. S&P stock price index, building products companies	0.4	0.2
4. LME spot price of primary copper	0.6	-0.1
5. Index of new private housing units authorized by permit	0.0	0.0
6. Spread between the U.S. 10-year Treasury Note and the federal funds rate	-0.1	-0.2
Trend adjustment	0.0	0.0
Percent change (except for rounding differences)	0.5r	-0.2
Coincident Index		
1. Industrial production index, primary smelting and refining of copper (NAICS 331411)	0.2r	0.0
2. Total employee hours, copper rolling, drawing, extruding, and alloying (NAICS 33142)	-0.3	2.0
3. Copper refiners' shipments (short tons)	NA	NA
Trend adjustment	0.1	0.1
Percent change (except for rounding differences)	0.0r	2.1

Sources: Leading: 1, Bureau of Labor Statistics; 2, U.S. Census Bureau and U.S. Geological Survey; 3, Standard & Poor's; 4, London Metal Exchange; 5, U.S. Census Bureau and U.S. Geological Survey; 6, Federal Reserve Board and U.S. Geological Survey. Coincident: 1, Federal Reserve Board; 2, Bureau of Labor Statistics; 3, American Bureau of Metal Statistics, Inc. and U.S. Geological Survey. All series are seasonally adjusted, except 3, 4, and 6 of the leading index.

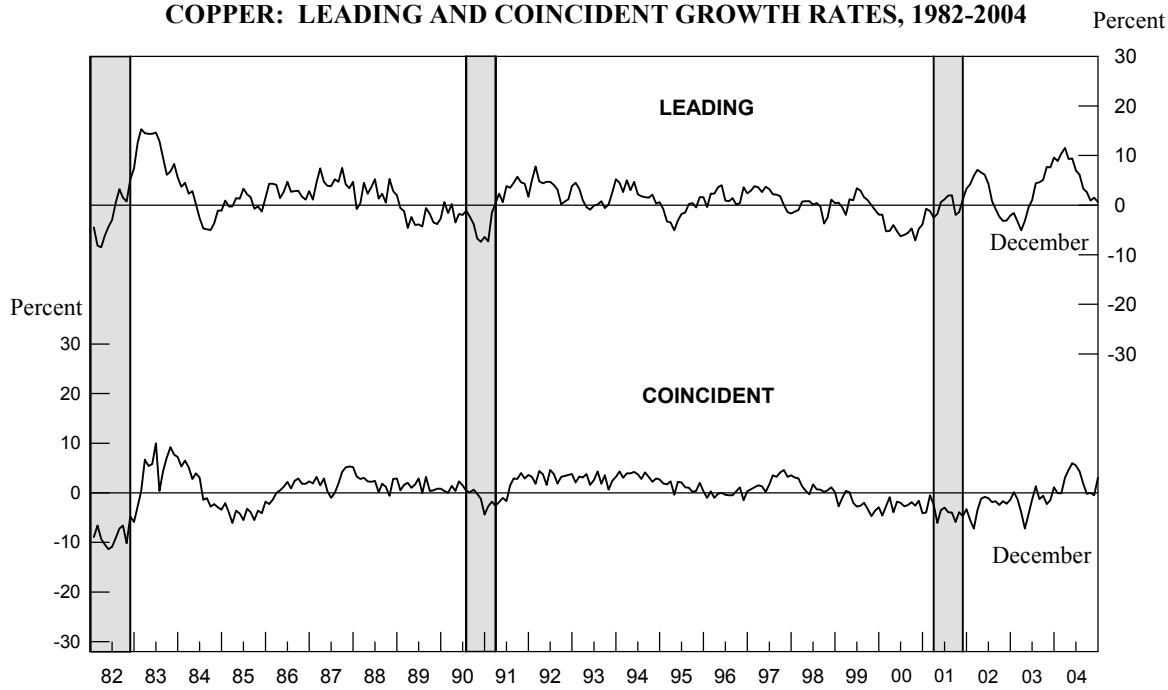
r: Revised NA: Not available

CHART 6.
COPPER: LEADING AND COINCIDENT INDEXES, 1982-2004



Shaded areas are business cycle recessions. Asterisks (*) signify peaks (the end of an expansion) and troughs (the end of a downturn) in the economic activity reflected by the indexes.

CHART 7.
COPPER: LEADING AND COINCIDENT GROWTH RATES, 1982-2004



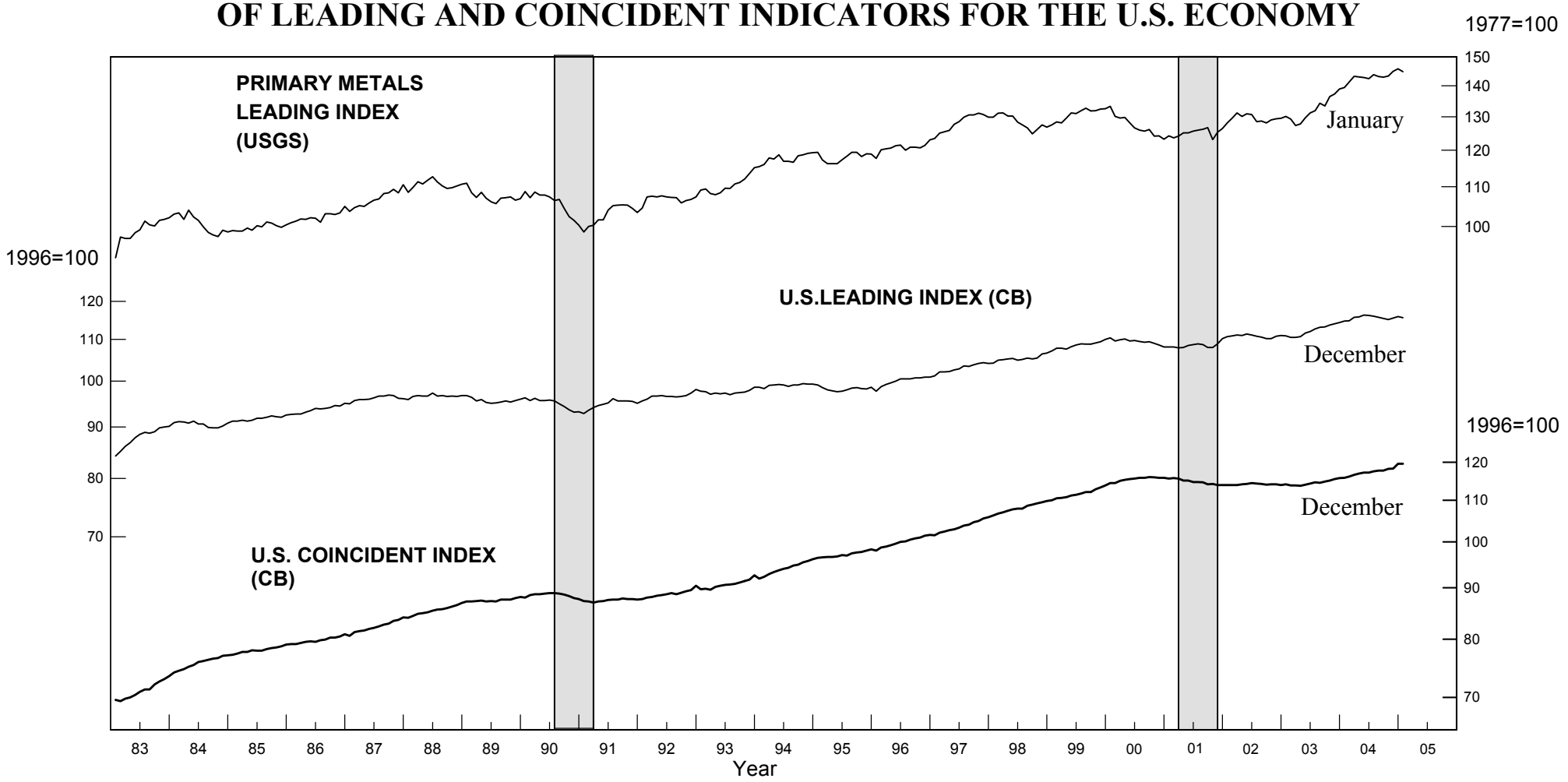
Shaded areas are business cycle recessions.

The growth rates are expressed as compound annual rates based on the ratio of the current month's index to its average level during the preceding 12 months.

U.S. Geological Survey, February 2005

Chart 8.

PRIMARY METALS LEADING INDEX AND COMPOSITE INDEXES OF LEADING AND COINCIDENT INDICATORS FOR THE U.S. ECONOMY



Shaded areas are business cycle recessions.

Sources: U.S. Geological Survey (USGS) and Conference Board (CB).

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